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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/539,939	06/17/2005	Marc De Vogelaere	2002P06474WOUS	6843

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SIEMENS CORPORATION
INTELLECTUAL PROPERTY DEPARTMENT
170 WOOD AVENUE SOUTH
ISELIN, NJ 08830

EXAMINER

LEADER, WILLIAM T

ART UNIT	PAPER NUMBER
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1795

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09/05/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/539,939	Applicant(s) DE VOGELAERE ET AL.	
	Examiner WILLIAM T. LEADER	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 June 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19-35, 38 and 39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 19-35, 38 and 39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 16, 2008 has been entered.

2. On June 16, 2008, applicant submitted a supplemental response to the final office action and an English language translation. In the Remarks, applicant states that they "are providing herewith a certified copy of the English translation of the German priority document to perfect Applicants priority claim of December 18, 2002." However, the cover sheet of the translation, entitled "Verification of a Translation," states that "the English translation of the international application No. PCT/DE2003/003954 is a true and complete translation of the above identified international application as filed. There is no indication in the statement of verification that the translation is of the German priority document.

3. On June 17, 2008, applicant filed a certified copy of the foreign priority document, German application 102 59 3612 filed on December 18, 2002. As

indicated in the advisory action mailed on May 28, 2008, a certified copy of the foreign priority document bearing the WIPO stamp was received on June 17, 2005. The document received on June 17 is a duplicate copy of the earlier received document. Included with the certified copy in applicant's June 17 submission was the same Verification of a Translation statement and translation submitted on June 16. Again, this verification statement indicates that the translation is of international application no. PCT/DE2003/003954, not the German priority document.

4. MPEP 201.14(a) is directed to Right of Priority, Time for Filing Papers. It indicates that an English language translation of a non-English language foreign application is not required except for specific situations including when necessary to overcome the date of a reference relied upon by the examiner. If an English language translation is required, it must be filed together with a statement that the translation of the certified copy is accurate.

5. In the present application, applicant is attempting to overcome the January 23, 2003, publication date of the Boucard reference (WO/03/006710). PCT/DE2003/003954, of which the present application is a national stage filing and for which applicant has provided an English translation, was filed on December 1, 2003. This date is after the publication date of the Bouchard reference. In order to overcome the reference, applicant must perfect the claim of priority based on

German application 102 59 3612 by submitting a verified English translation of this German application.

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Applicant's amendments to claims 20 and 27 are deemed to have overcome the rejection of record under 35 U.S.C. 112, second paragraph.

Claim Rejections - 35 USC § 103

8. Claims 19 and 24, 25 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Glen (3,963,588) or Takada et al (4,859,291) in view of DE 41 11 174.

9. The Glen patent is directed to an electroplating process which is useful in repairing damaged parts. Glen observes that it is often desirable, such as in the repair of metal parts, to selectively electroplating the damages part so as to refill a depression therein (column 1, lines 13-15). Cracks which appear in metal articles such as molds are repaired by grinding out sufficient material so as to remove all traces of the crack. The depression resulting from the grinding operation is masked, e.g., by the use of electroplating tape. The depression is filled by

electrolytic deposition. See column 3, lines 28-47 and figure 1. The depression is a material separation as recited in instant claim 19. Glen teaches that any of the electrolytic solutions well known in the art may be used (column 2, lines 25-30).

The apparatus used to perform the electroplating process of Glen includes anode housing h in which anode electrode 9 is placed (column 2, lines 29-30, 49-54).

Figure 1 shows that the housing and workpiece may be immersed beneath the level of the plating electrolyte (column 2, lines 59-63).

10. The Takada et al patent also discloses the use of electrolytic deposition to repair cracks. In overhauling aircraft components such as landing gear components, when the occurrence of corrosion or cracks in a surface portion of the components is found, the portion is mechanically removed and repaired by nickel plating (column 1, lines 21-26). The depression resulting from the removal of the corrosion or crack is a material separation as recited in instant claim 19. As shown in the figure, the apparatus used to carry out the process of Takada et al includes anode electrode 3 which, along with the workpiece 2 is immersed in plating electrolyte in plating tank 1.

11. Applicant's process in instant claim 19 differs from that of Glen or Takada et al by reciting the use of an eddy-current probe. German patent publication '174 is directed to a method of increasing current density during electrocoating of a workpiece. As shown in the figure, device 3, which may be considered to be an

eddy-current probe, is provided in the electrolyte in the region of the workpiece being coated. An AC current is applied to device 3 which causes the workpiece to vibrate. This is the same effect caused by applicant's probe. Note page 4, lines 4-10 of the specification which indicate that the substrate is mechanically excited by the probe, i.e. the probe generates oscillations in the substrate.

12. The prior art of record is indicative of the level of skill of one of ordinary skill in the art. It would have been obvious at the time the invention was made to have utilized a probe of the type disclosed by German publication '174 in the process of Glen or Takada et al because current density would have been increased resulting in a more efficient process.

13. With respect to claim 24, German publication '174 discloses that the AC current is applied to the probe at variable frequencies. See the English abstract. With respect to claim 25, it would have been obvious to have chosen a frequency to cause deposition in the defect being filled. With respect to claim 28, as noted above, Glen discloses grinding out material to remove cracks, while Takada et al disclose mechanical removing the damaged portion. Removing damaged material would widen the opening.

14. Claims 20-22, 26, 27 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Glen (3,963,588) or Takada et al (4,859,291) in view of DE 41 11

174 as applied to claims 19, 24, 25 and 28 above, and further in view of Lashmore et al (5,158,653).

15. Claim 20 recites that the substrate is electrically connected through an electrolyte to an electrode. As stated in paragraph 3 of the final rejection mailed March 14, 2008, applicant acknowledged at page 5 of the Remarks submitted on November 30, 2007, anyone skilled in the art will understand that a complete circuit is necessary in order to conduct current to effect the deposition. Both Glen and Takada et al disclose an anode electrode and electrolyte through which the substrate is electrically connected.

16. Claim 20 as amended differs from Glen and Takada et al by reciting provision of a variable current. The Lashmore et al patent is directed to the deposition of a graded alloy coating which includes a plurality of layers as shown in figures 1-4. As shown in figure 5, pulse current is applied in which a base current is superimposed on the current pulses and interpulse periods. This is a variable current as recited in claim 20.

17. It would have been obvious at the time the invention was made to have utilized a varying pulsed current as taught by Lashmore because a graded deposit with improved material properties would have been formed.

18. With respect to claim 21, as noted above, Lashmore discloses the use of a pulsed current. With respect to claim 22, Lashmore teaches pulsing from one

deposition parameter at which primarily a first metal is deposited to a second deposition parameter at which primarily only a second metal is deposited. See column 3, line 65 to column 4, line 10. With respect to claims 26 and 27, Glen discloses electrodeposition of copper onto a copper substrate (column 2, lines 28-30). Takada et al discloses plating nickel onto high strength steel which is an alloy including nickel (column 1, lines 21-26). With respect to claim 35, figure 5 of Lashmore shows that pulse current is applied in which a base current is superimposed on the current pulses and interpulse periods.

19. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Glen (3,963,588) or Takada et al (4,859,291) in view of DE 41 11 174 and further in view of Lashmore et al (5,158,653) as applied to claims 20-22, 26, 27 and 35 above, and additionally in view of GB 1521130.

20. As indicated in the previous office action, the abstract of the '130 publication discloses the use of a piezoelectric transducer to provide ultrasonic radiation to an electroplating bath. The transducer is considered to be an ultrasonic probe as recited in instant claim 23. It would have been obvious at the time the invention was made to have utilized an ultrasonic transducer in the process of Glen or Takada et al as taught by GB '130 because agitation of the electroplating bath would have been provided and electrolyte constituents more evenly distributed in the bath.

21. Claims 29-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Glen (3,963,588) or Takada et al (4,859,291) in view of DE 41 11 174 as applied to claims 19, 24, 25 and 28 above, and further in view of de Hek (4,436,591).

22. The de Hek patent is directed to the electrolytic deposition of a metal onto a workpiece. The waveforms of different types of applied electric current are shown in figures 6a-6d. Figure 6b shows current with both positive and negative pulses as recited in instant claim 29. Figure 6d shows current with a repeated sequence of two different blocks. This current is considered to meet the limitation of instant claims 30-32. It would have been obvious at the time the invention was made to have utilized pulsed current as shown by de Hek in the process of Glen or Takada et al because it results in efficient deposition of metal on a substrate.

23. Claims 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Glen (3,963,588) or Takada et al (4,859,291) in view of DE 41 11 174 as applied to claims 19, 24, 25 and 28 above, and further in view of Thoma et al (4,895,625)

24. Claim 33 recites that the further material is a MCrAlY alloy. The Thoma et al patent is directed to electrolytic deposition of protective coatings on structural components such as gas turbine blades. See the abstract. As shown in example 1, a MCrAlY alloy may be deposited. It would have been obvious at the time the

invention was made to have utilized the repair process disclosed by Glen or Takada et al to have filled a material separation in a damaged surface of an MCrAlY alloy because this class of alloys may be deposited by electrolytic deposition as shown by Thoma. As noted above, Glen teaches that any of the electrolytic solutions well known in the art may be used.

25. Claims 34, 38 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Glen (3,963,588) or Takada et al (4,859,291) in view of DE 41 11 174 and de Hek (4,436,591) as applied to claims 29-32 above, and further in view of Lashmore et al (5,158,653).

26. With respect to claim 34, Lashmore produces a gradient in the material composition. See the abstract. It would have been obvious to have varied the pulse parameters as disclosed by Lashmore et al to have produced a graded material because material properties would have been improved. With respect to claim 38, Lashmore et al discloses varying the duration and magnitude of the pulses. See figure 5. With respect to claim 39, figure 5 of Lashmore shows that pulse current is applied in which a base current is superimposed on the current pulses and interpulse periods.

27. Because the foreign priority claim based on German application 102 59 3612 has not been perfected, the Boucard reference remains applicable to the claims, and the rejections of record are repeated.

28. Claims 19, 24, 25, 28 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boucard et al (WO 03/006710) in view of DE 41 11 174 for the reasons of record.

29. Claim 20-22, 26, 27 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boucard et al (WO 03/006710) in view of DE 41 11 174 as applied to claims 19, 24, 25, 28 and 33 above, and further in view of Takeuchi et al (6,024,861) and Lashmore et al (5,158,653) for the reasons of record.

30. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Boucard et al (WO 03/006710) in view of DE 41 11 174 and further in view of Takeuchi et al (6,024,861) and Lashmore et al (5,158,653) as applied to claims 20-22, 26, 27 and 35 above, and additionally in view of GB 1521130 for the reasons of record.

31. Claims 29-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boucard et al (WO 03/006710) in view of DE 41 11 174 as applied to claims 19, 24, 25, 28 and 33 above, and further in view of de Hek (4,436,591) for the reasons of record.

32. Claims 34, 38 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boucard et al (WO 03/006710) in view of DE 41 11 174 and de Hek (4,436,591) as applied to claims 29-32 above, and further in view of Lashmore et al (5,158,653) for the reasons of record.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to WILLIAM T. LEADER whose telephone number is (571) 272-1245. The examiner can normally be reached on Mondays-Thursdays and alternate Fridays, 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Susy Tsang-Foster can be reached on 571-272-1293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/William Leader/
August 29, 2008

/Susy Tsang-Foster/
Supervisory Patent Examiner, Art Unit 1795